# FINDING OF NO SIGNIFICANT IMPACT
# AND
# SUPPLEMENTAL ENVIRONMENTAL ASSESSMENT

GRASSLAND BYPASS CHANNEL
PROJECT

INTERIM USE OF A PORTION OF THE SAN LUIS DRAIN

FOR CONVEYANCE OF DRAINAGE WATER THROUGH THE GRASSLAND WATER

DISTRICT AND ADJACENT GRASSLAND AREAS

Prepared by
U.S. Bureau of Reclamation
Mid-Pacific Region
Sacramento, California

November 1995

United States Department of the Interior
Bureau of Reclamation
Mid-Pacific Region
Sacramento, California

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## INTERIM USE OF A PORTION OF THE SAN LUIS DRAIN FOR CONVEYANCE OF DRAINAGE WATER THROUGH THE GRASSLAND WATER DISTRICT AND ADJACENT GRASSLAND AREA

Recommended: _____
Area Manager, South-Central
California Area Office

Concur: _____
Regional Environmental Officer

Approved: _____
Regional Director

Date: November 3, 1995

FONSI No. 96-01-MP

# FINDING OF NO SIGNIFICANT IMPACT

## GRASSLAND BYPASS CHANNEL PROJECT

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# SUPPLEMENTAL ENVIRONMENTAL ASSESSMENT

## GRASSLAND BYPASS CHANNEL PROJECT

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# 1.0 BACKGROUND

## 1.1 INTRODUCTION

This Supplemental Environmental Assessment (SEA) has been prepared to evaluate the effects of an interim use of portions of the San Luis Drain. This interim use is being proposed as a first step towards alleviating chronic water management problems for wildlife areas within the greater Grasslands Area.

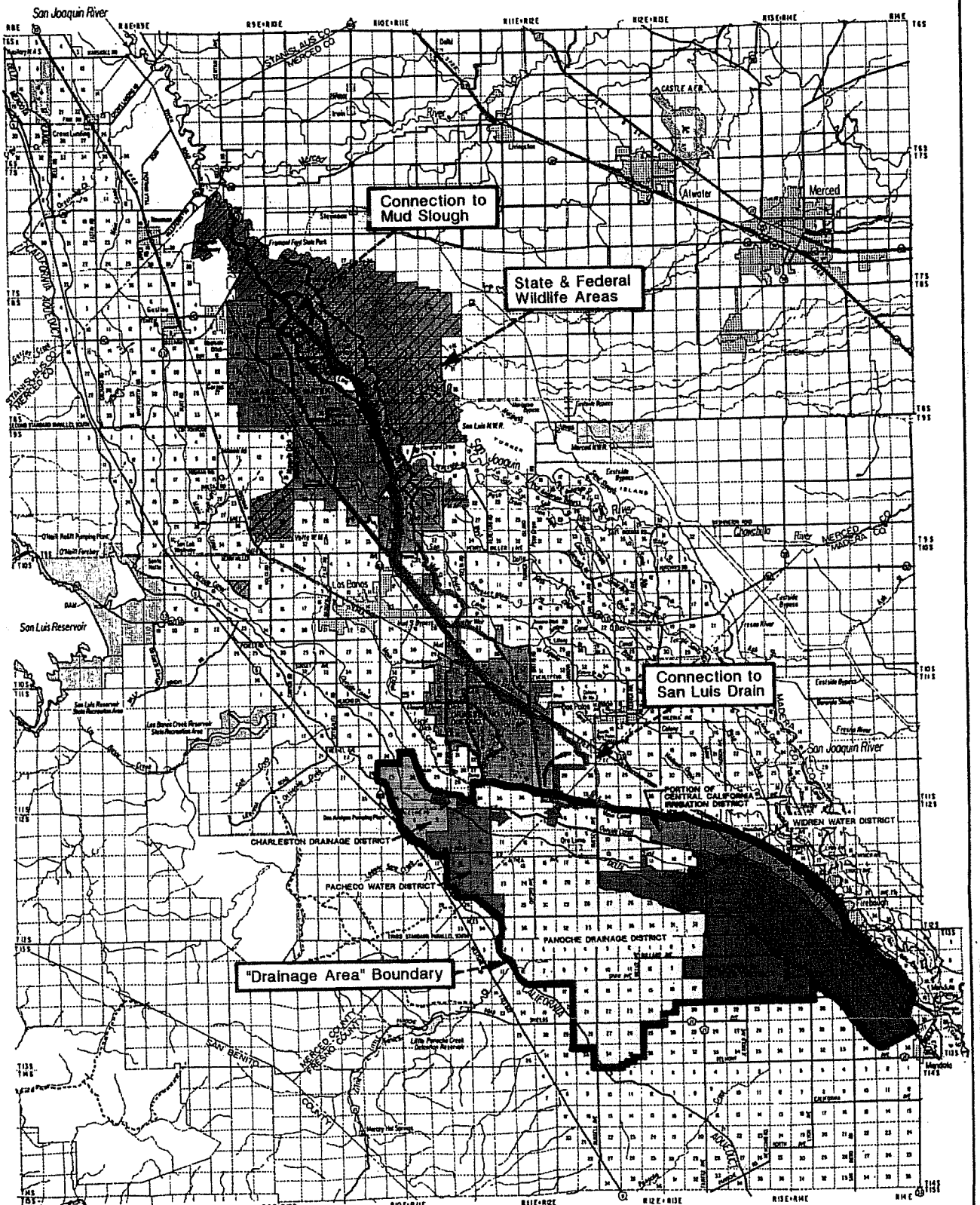
As discussed in this SEA, an Environmental Assessment (EA) and a Finding of No Significant Impact (FONSI) were previously prepared for an earlier version of the present proposal. As a result of a modification of the proposal, and additional information concerns, this SEA has been prepared to update the previously prepared environmental documentation.

## 1.2 HISTORY OF PROJECT DEVELOPMENT

An Environmental Assessment (EA) and Initial Study pursuant to CEQA for the proposed project was prepared and dated November 1990. A Negative Declaration was adopted by Panoche Drainage District (as lead agency) on December 26, 1990, setting forth specific mitigation measures that would be included in the project. A supplement to the EA was prepared by the U. S. Bureau of Reclamation (Reclamation) in April 1991. A FONSI was approved by Reclamation on October 18, 1991 setting forth additional specific environmental commitments which would be incorporated in the project. In accordance with one of the environmental commitments, on September 15, 1993, informal endangered species consultation was completed on candidate threatened and endangered species. On October 15, 1993, Corps of Engineers Section 404 Permit No. 199100283 was issued for the project.

In accordance with another of the environmental commitments contained in the FONSI, an Oversight Committee was formed and has met periodically. From 1991 through 1995, a Technical Committee formed by the Oversight Committee has met and performed various tasks related to the project. A monitoring program for the proposed project was prepared and adopted by the Oversight Committee on June 9, 1993. On January 12, 1995, a Draft Quality Assurance Plan was prepared by Reclamation for the Technical Committee for the monitoring program. On January 31, 1995, a final report on Initial Use and Operation of the San Luis Drain was completed. This report from a Task Group of the Technical Committee of the Oversight Committee was prepared as guidance for the operation of the project. This Task Group also evaluated sediments in the Drain and prepared a list of several options for dealing with the sediments.

For various reasons the project has not yet been implemented. The project is now planned to be implemented in the fall of 1995. A different alternative, similar to the Grasslands Bypass Channel Alternative included in the November 1990 EA/Initial




Proposed Action :

- Channels that will no longer have unusable drain water.
- Channels with drain water.
- Conveyance of drain water in San Luis Drain.
- Location of project features.

SUMMERS ENGINEERING, INC.
HANFORD CONSULTING ENGINEERS CALIFORNIA
DECEMBER 1989

FIGURE 1

## 1.4 LONG-TERM PROGRAM

The current proposal is recognized as a short-term or interim measure. Reclamation does not intend to execute extensions, renewals or additional agreements allowing for the use of the Drain beyond the 5-year period covered by this Use Agreement without assuring that such use is consistent with a long-term drainage management plan and provides for compliance with water quality standards, including, as necessary for such compliance, continuing additional reductions in selenium loads. The San Joaquin Valley Drainage Program recommended use, and extension of the Drain as part of the overall management plan for the Grassland subarea. However, several actions will be required before the use of the Drain can be considered on a long term basis. A long-term strategy involving use of the Drain as recommended in "A Management Plan for Agricultural Subsurface Drainage and Related Problems on the Westside San Joaquin Valley - 1990" (SJVDP Report), will also involve meeting water quality standards in the River through reduction in selenium loads delivered to the River, control of the timing and amount of discharges according to the variable flows in the River, as well as extension of the Drain to the River in order to remove drainage flows from Mud Slough.

The current proposal is considered an experimental first step, in that it will allow better monitoring and management of the drainage flows. This is expected to lead to better understanding, and identification of the most effective and cost efficient control measures to attain water quality standards. The San Luis & Delta-Mendota Water Authority (SL&DMWA) has begun developing a long-term management plan for drainage, and information gathered from this project will be utilized in further development and refinement of that plan.

Reclamation anticipates that any long-term use of the Drain beyond the scope of this interim experimental project will require further specific planning and prior completion of an EIS under NEPA (along with other environmental compliance).

# 2.0 PURPOSE AND NEED FOR ACTION

The purpose, and need for action can be summarized as follows:

(1) to implement an interim operational measure to remove unusable agricultural drainage water from wetland water supply conveyance channels.

(2) to gain a better understanding, and quantification of:
  (a) selenium loading from the Grasslands Basin.
  (b) in-transit selenium losses.

(3) to gain a better understanding and determine whether a single regional drainage conveyance facility will facilitate drainage management and promote improved water quality in the San Joaquin River.

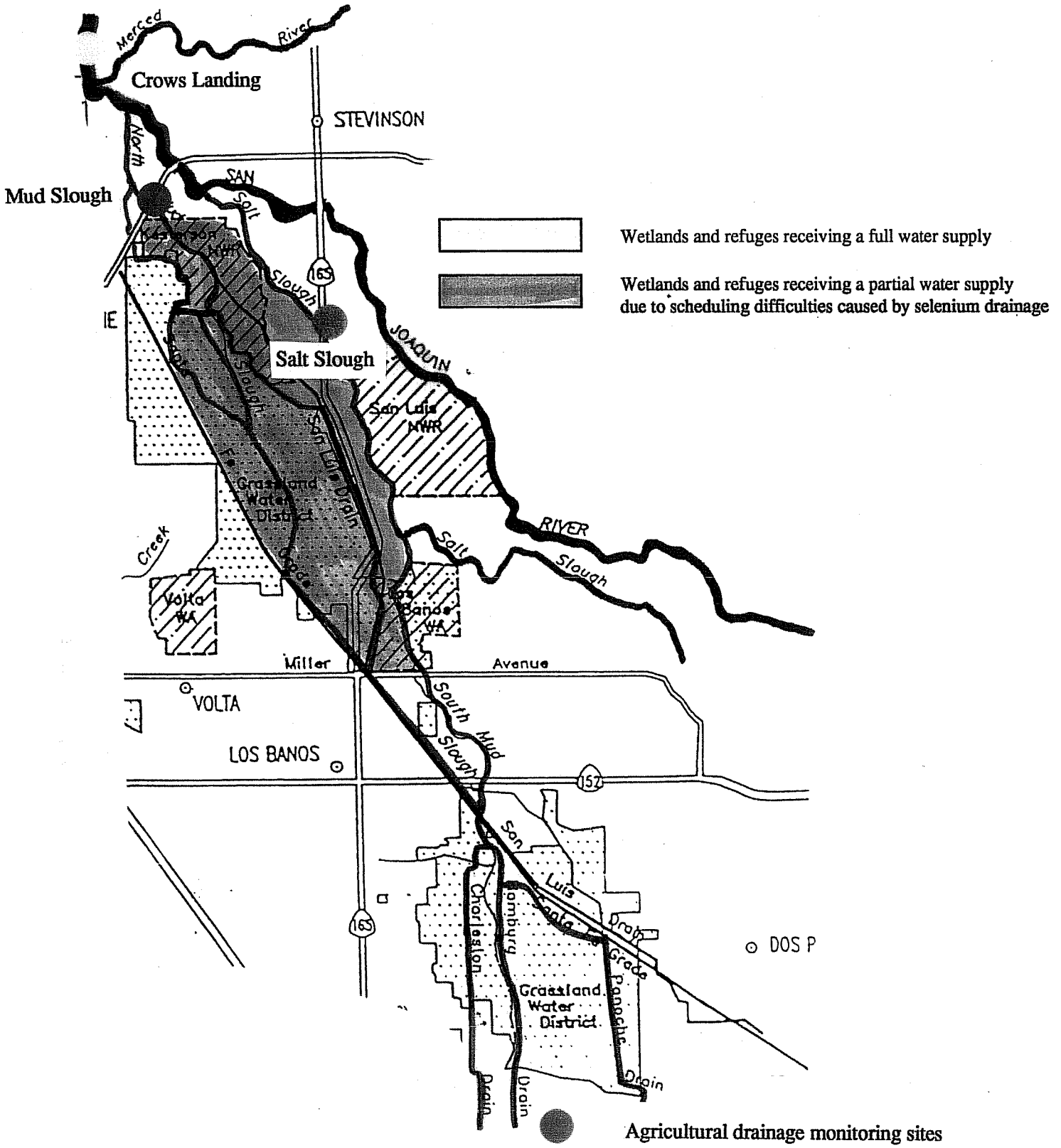



**Figure 2 Provision of fresh water supplies to refuges and wetlands in the Grasslands Basin without Use of the San Luis Drain**

## 3.0 PROJECT DESCRIPTION

A revision to the project as described in the 1991 EA/FONSI is now being proposed that would change the inlet point of the drainage water into the San Luis Drain. The result would be the drainage water bypass of all the wetlands in the Grassland area (Figure 2). This minor revision to the project should result in a greater benefit to the wetlands of the Grasslands area.

The present proposal would collect all of the commingled drainage water and place it into the San Luis Drain at a point near Russell Avenue (Milepost 105.72, Check 19). An existing drain would be modified to convey drainage water from the existing Panoche and Main Drains, to the San Luis Drain, at Russell Avenue. Drainage water from Charleston Drainage District and Pacheco Water District would be re-routed from its current pathway, to the new bypass. Drainage water from Broadview Water District, Firebaugh Canal Water District, and the Camp 13 drainage area would be conveyed in the existing Main Drain, to the new bypass. The drainage water would travel approximately 28 miles in the San Luis Drain, to its northern terminus (Milepost 78.65), where the drainage water would enter Mud Slough (North) for six miles, before reaching the San Joaquin River at a location three miles upstream of its confluence with the Merced River.

The original project would have connected to the San Luis Drain at a point approximately 1.3 miles south of Highway 152 (Milepost 96.22, Check 11). The result of the proposed revision is the use of 9 additional miles of the San Luis Drain and elimination of unusable subsurface agricultural drainage water from the wetlands water supply system.

The new inlet to the Drain at Milepost 105.72 would be identical in construction to the previous proposal that was reviewed in the Environmental Assessment/Initial Study. There are no changes proposed in the project downstream of the connection point.

The terms and conditions of the planned action will be included in a Use Agreement to be executed by Reclamation and the SL&DMWA.

### 3.1 DEVELOPMENT OF PROJECT

When the SL&DMWA approached Reclamation with this proposal for interim use of the San Luis Drain, Reclamation was impressed with the willingness on the part of the draining parties to improve drainage management. Reclamation has a long history with various proposals for using this Drain as part of an overall drainage management program. For a variety of reasons, raised by a variety of stakeholders, previous proposals have not been successfully implemented. Reclamation wanted to ensure the potential for success by building from the lessons learned in the 1994 Bay/Delta experiences. EPA, FWS, and Reclamation began discussions with representatives from three primary constituencies - Environmental Community, Urban Community, and draining parties, as a way to further define conditions for project success. The results of these discussions were open to public review, by way of NEPA through the Draft Supplemental EA.

TABLE 1
SUMMARY OF KEY MONITORING COMPONENTS

| # | ITEMS MONITORED | APPROACH |
|---|---|---|
| 1 | Chemical Constituents - concentrations and loads | * Boron, Total Dissolved Solids, Dissolved Oxygen, Selenium, Flow<br>* Combination weekly at most stations, daily at one |
| 2 | Selenium loading from Grasslands Drainers | * Total/dissolved/integrated from inlet and outlet<br>* Flow and concentration<br>* Combination of weekly inflow and daily outflow |
| 3 | Selenium in transit changes along San Luis Drain | * Inlet/outlet data from #2, adjusted for time<br>* Determined weekly |
| 4 | Selenium in sediment in San Luis Drain | * Information from #2 and #3<br>* Total volume with annual inventory at every reach<br>* Quarterly - intensive at 4 sites (3 depths) - Total Selenium, % moisture, total carbon, particle size distribution |
| 5 | Biota monitoring for bioaccumulation | * Various invertabrates, fish and plants<br>* Nesting birds at Mud Slough |
| 6 | Water Quality Standards | * Grasslands, Salt Slough, Camp 13, Agatha<br>* Quarterly |
| 7 | Toxicity | * Mud Slough, Salt Slough<br>* In-situ fish<br>* USEPA - 3 species |
| 8 | Source Control Measures Implemented | * Review annual reports on status of water conservation plan implementation |

# 4.0 GENERAL INFORMATION

## 4.1 STATUS OF RECOMMENDATIONS FROM SJVDP REPORT

1) *Use the Grassland Task Force water districts as the nucleus of a Regional Drainage Entity to coordinate and jointly manage subarea-wide drainage problems.* The proposed action requires this.
2) *Provide the facilities required to intercept contaminated subsurface drainage water now being discharged into open channels within the grasslands wildlife habitat, and convey these to the San Luis Drain.* This is a primary purpose of the proposed action.
3) *Renovate and extend the San Luis Drain, bypassing 20,000 acre-feet of contaminated drainage water around wetlands (similar to the Zahm-Sansoni-Nelson plan).* The proposed action is the first step in accomplishing this recommendation. Full implementation will require a long-term plan to meet objectives, and an associated EIS before the Drain could be extended.
4) *Improve on-farm water conservation and source control on all irrigated lands and reduce deep percolation on lands having drainage problems by 0.35 acre-feet per acre per year (on the average) as soon as possible.* Considerable success has been achieved in reducing deep percolation reductions over the past 9 years. (The status of water conservation plans is discussed in Section 4.3.)
5) *Intensify and complete local demonstration projects on source control and treatment of drainage water.* This is ongoing.
6) *The U.S. Bureau of Reclamation should actively seek authority to reallocate 74,000 acre-feet of water annually from the CVP to replace drainage water used on wetlands before 1985.* The CVPIA authorized full water supplies for wetlands. This project will assist in delivery of this water.
7) *Restore drainage-contaminated wetlands.* The proposed action removes the potential for contamination by eliminating the need to operate the flip-flop conveyance system whereby the same channels are used for both drainage and water supply.
8) *Provide 20,000 acre-feet of water to the Merced River each October to attract migrating fish from drainage water discharging to the San Joaquin River.* This is being addressed via the CVPIA requirements for fishery restoration.

## 4.2 IMPLEMENTING LAND RETIREMENT

Land retirement as included in the SJVDP recommended plan (i.e., taking lands high in selenium out of production) is often suggested as a simple way to solve the drainage management problems. Unfortunately, developing and implementing a successful program is complicated. As part of the program, decisions must be made regarding who would manage any lands that are retired. FWS and Reclamation are currently evaluating which lands are best for wildlife and how to best manage retired lands using an ecosystem approach. The interim use of the San Luis Drain has no direct bearing on the selection of lands for land retirement. However, the improved accuracy of selenium load estimation resulting from this

discussed in Section 4.3. As mentioned in Section 4.2, land retirement programs are in development and land retirement can play a role in drainage management, particularly contaminant load reduction. Irrigation and drainage recycling facilities are being installed in many of the water districts. Panoche and Firebaugh Canal Water Districts have installed real-time gaging stations and telemetry equipment at the District outlets to measure drainage flow and salt loads leaving the District. Other water districts may implement these technologies in the near future. Economically feasible treatment technologies to reduce contaminant loads before recycling or discharge may also be developed but are not presently available.

## 5.0 ENVIRONMENTAL COMMITMENTS

Most of the environmental commitments in the 1991 FONSI still apply to the new proposed action. These have been modified or updated only where necessitated by the change from the original proposed action in the discharge point to the San Luis Drain; to reflect the current status of drainage and water quality management efforts; or in response to updated discussions and analysis which have occurred since the 1991 FONSI.

### 5.1 TO ENSURE THAT PROGRESS CONTINUES TOWARD LONG-TERM RESOLUTION OF DRAINAGE ISSUES

To ensure that progress continues toward achieving long-term resolution of drainage management issues the following activities will be undertaken:

#### 5.1.1 Use Agreement Termination and Renewal Conditions

1. The Use Agreement will terminate at a fixed date no more than two years from the date drainwater is first discharged by the SL&DMWA, or by one of the draining parties pursuant to an agreement with the SL&DMWA, into the Drain. Renewal of this Use Agreement for a period not to exceed three years will occur only if:

(a) The Regional Board adopts and implements approvable basin plan amendments and implementation measures consistent with the recommendations included in the consensus letter to the Regional Board dated November 3, 1995.

(b) The Regional Board has issued to the SL&DMWA waste discharge requirements for discharges from the San Luis Drain consistent with the recommendations included in the consensus letter to the Regional Board dated November 3, 1995, and the SL&DMWA is operating the Drain in accordance with those requirements. Reclamation can waive this requirement upon a finding that the failure of the Regional Board to adopt and implement such basin plan amendments and implementation measures is due solely to factors beyond the control of either the Authority, the draining parties, or the Regional Board.

the Use Agreement. Additional detail about the role of the Oversight Committee concerning load reduction assurances is discussed below. The Oversight Committee will appoint and be assisted by a technical committee as determined necessary or appropriate by the Oversight Committee. In addition, it may appoint one or more subcommittees comprised of experts to help in the analysis of biological or water quality monitoring data or other information relevant to the drainage issue as necessary or appropriate to assist in carrying out its role.

### 5.1.4 Load Reduction Assurances and Fees

The Drainage Authority will pay Drainage Incentive Fees in accordance with the provisions of the Use Agreement and the letter to the Regional Board. The collected fees will be administered by the Oversight Committee. The fee schedule was developed to provide monetary incentives for the phased reduction of selenium loads over 5 years. The fees will be used for projects selected by the Oversight Committee to assist in extra programs or actions to assist in meeting selenium load reduction values and/or water quality objectives in the Drainage Area, above any such actions or programs budgeted by the SL&DMWA or Reclamation. The selection will be made after consultation with the draining parties and other interested parties and may be based upon recommendations from subcommittees, if any. Fees can be adjusted downward, but only in the event and to the extent that the SL&DMWA demonstrates that unforeseeable and uncontrollable events caused the exceedance. The standard of "unforeseeable and uncontrollable events" is intended to deal with exceedances, for example, caused by flooding of selenium-laden coastal streams entering the drainage system such as occurred in March 1995.

Other unforeseeable and uncontrollable events are difficult to define. Some examples of events that are **NOT** considered unforeseeable and uncontrollable include, but are not limited to:

* heavy drainage discharges caused by greater-than-expected surface water applications
* excessive drainage flows caused by irrigation actions
* individual farmers' irrigation management practices
* distribution system malfunctions
* selenium from sediments in the drain

Annual exceedances of selenium load values by more than 20 percent will result in termination of the project, unless the SL&DMWA demonstrates that such exceedances were caused by unforeseeable and uncontrollable events in accordance with the examples discussed above. Although there is no express termination provision for exceedance of monthly load values, such exceedance could be grounds for termination if significant enough to cause unacceptable adverse environmental effects, as discussed in section 5.3.2 of the SEA, or if, for example, on annual review the Oversight Committee determined that such exceedances demonstrated such disregard for the draining parties' obligations as to constitute a breach of the Use Agreement.

5.2.2 Downstream Users Notification

After initial startup, discharges from the drain will be steady with seasonal fluctuations. The draining parties will work cooperatively with downstream entities regarding the timing of discharges and establish procedures which will ensure advance notice to, and coordination with, downstream diverters of upcoming releases.

The draining parties will make flow and monitoring data available to downstream diverters that have requested it. The draining parties will provide advance notice to such parties of initial start up, or other similar operations which may cause sudden changes in flow or quality and will develop procedures to coordinate with such parties on such operations.

5.2.3 ESA Consultation

The draining parties, in coordination with Reclamation, will consult with the FWS prior to engaging in any proposed Operation and Maintenance activities (e.g., grading, use of herbicides, rodenticide, etc.) that have the potential to affect threatened or endangered species (eg., giant kangaroo rat, San Joaquin kit fox).

5.2.4 Regional Archeology

Proposed construction areas have been evaluated and cleared by Reclamation's Regional Archeologist. If, during construction, subsurface or previously unidentified archeological resources are encountered, activities will immediately be halted and the Regional Archeologist notified. Appropriate clearance will be obtained prior to resumption of work. (See Section 7.1)

5.2.5 Protection of China Island

The draining parties will coordinate with the California Department of Fish and Game regarding the design and construction of retainer dikes or other measures to protect Fish and Game's China Island Unit from inflow of contaminated drainage waters.

5.2.6 Mud Slough

Fishing and collection of wild plants and animals will be prohibited in Mud Slough, and any other areas (i.e., mainstem San Joaquin River at mouth of Mud Slough) determined through the monitoring program to present a potential public health risk. The area will be posted in English, Spanish, and other appropriate languages. The draining parties will provide financial or other assistance as necessary to the USFWS and California Department of Fish and Game to ensure notification and enforcement of these prohibitions.

management, enhancement, and recovery activities directed at impacted species in channels cleaned up as a result of the project; and/or, establishment and attainment of more stringent contaminant load reductions. The costs of mitigation, as well as any required clean-up, shall be borne by the draining parties.

# 6.0 AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

## 6.1 WATER QUALITY - SALT SLOUGH, MUD SLOUGH, GRASSLANDS, AND SAN JOAQUIN RIVER

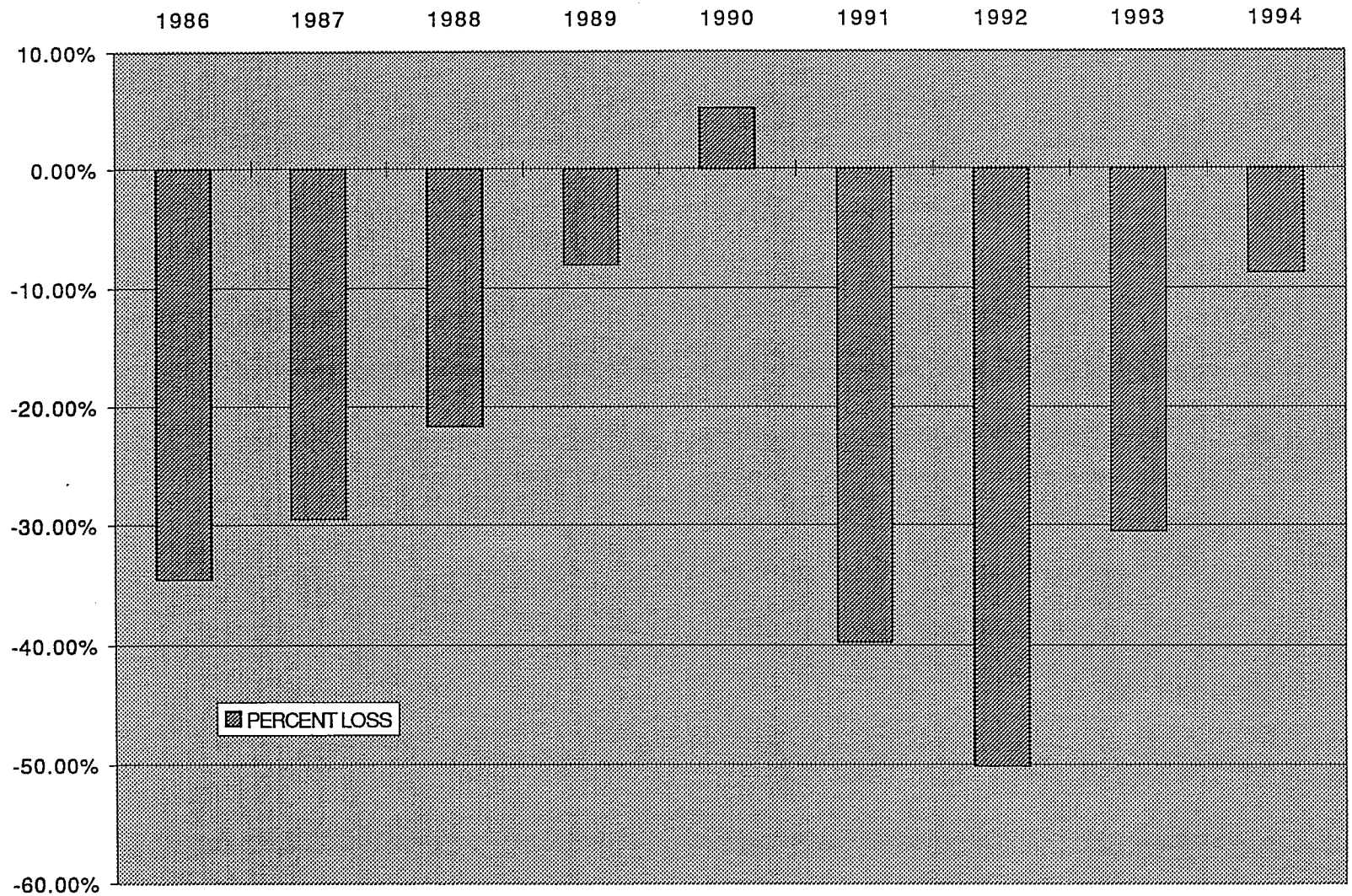
### 6.1.1 GENERAL

An existing policy adopted by the Regional Board in the Water Quality Control Plan for the San Joaquin River (Basin Plan) pursuant to state law establishes that with regard to the control of agricultural subsurface drainage discharges, the control of toxic trace elements, especially selenium, is the first priority. The Regional Board staff has acknowledged that salinity from agricultural subsurface drainage is also significant, but that the salinity issue needs to be considered as part of a basin wide salt management plan. For this reason, the Regional Board intends to immediately take up Basin Plan amendments relating to selenium, but has not proposed amendments or control actions relating to boron or salts. The present proposed project, in light of existing EPA-promulgated standards for selenium, focuses on selenium load reductions and requires the draining parties to devote efforts and resources to dealing with that element.

Unlike selenium, as discussed below in Section 6.1.2, salt and boron loads are not reduced enroute through the current system to the San Joaquin River. Hence, there is no potential increase in salt and boron loads discharged to the river as a direct result of this project. Salt and boron loads which are of concern to downstream diverters are discharged from an area much larger than the drainage area included in this project, much of which these parties do not control. Also, reductions in agricultural drainage discharges through source control and improved irrigation efficiency to meet selenium load values will result in reductions in loads from other drainage constituents, so limiting load values and incentive mechanisms to selenium is appropriate for this interim project.

In terms of achieving water quality objectives, the increase in frequency of exceeding objectives in Mud Slough over the no project condition is offset in virtually every case by a corresponding reduction in the frequency of exceeding objectives in Salt Slough. There is no significant difference in attainment of objectives in the San Joaquin River between the with and without project; however, load reductions required in years 3-5 of the project will begin to improve water quality conditions in the river. As mentioned above, implementation of the project does not alter requirements and ongoing activities to meet objectives in the River.

## FIGURE 3 YEAR TO YEAR VARIATION IN SE IN-TRANSIT LOSSES



## FIGURE 4. YEAR TO YEAR VARIATION IN SE IN-TRANSIT LOSSES (POUNDS)

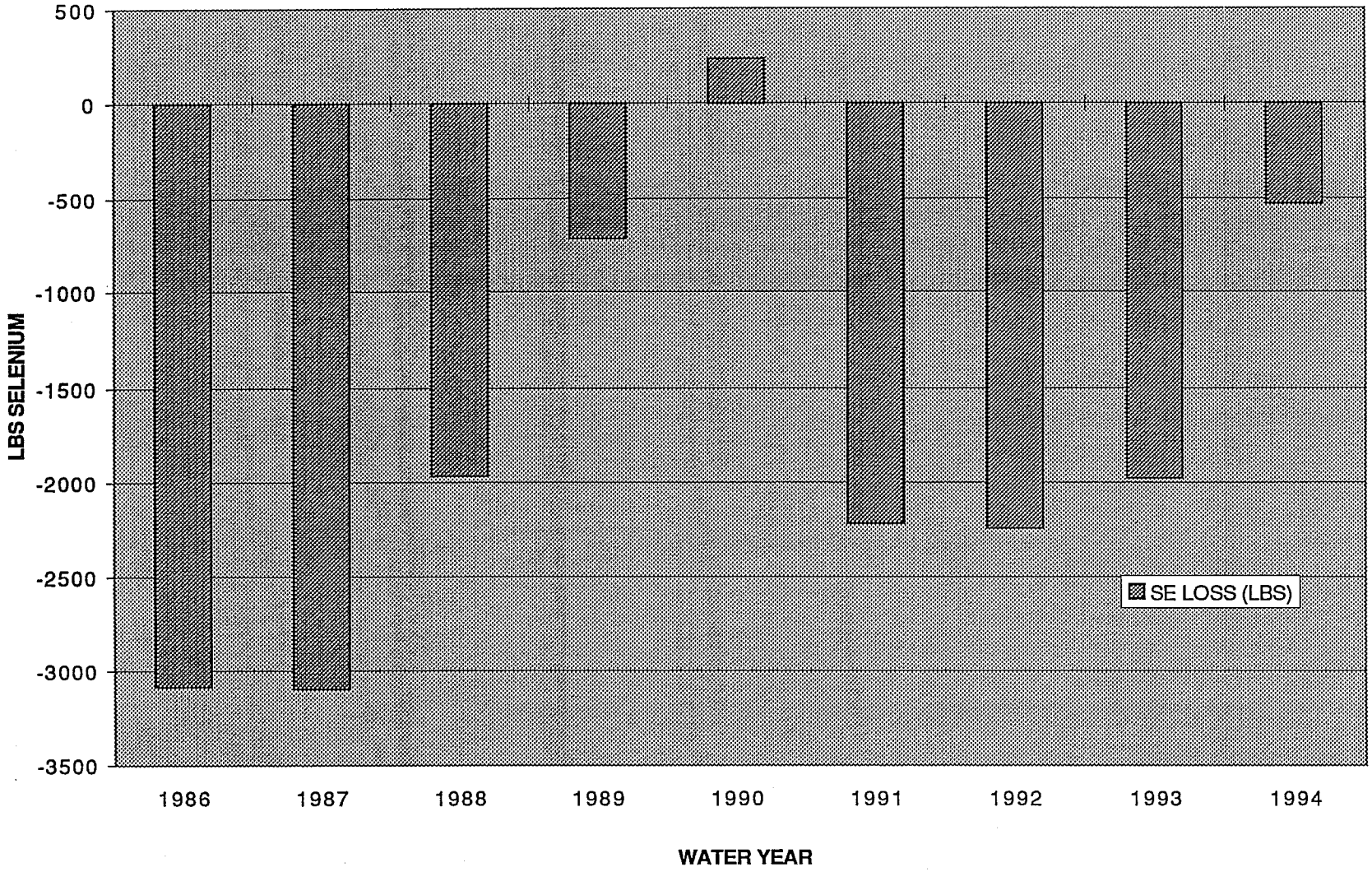
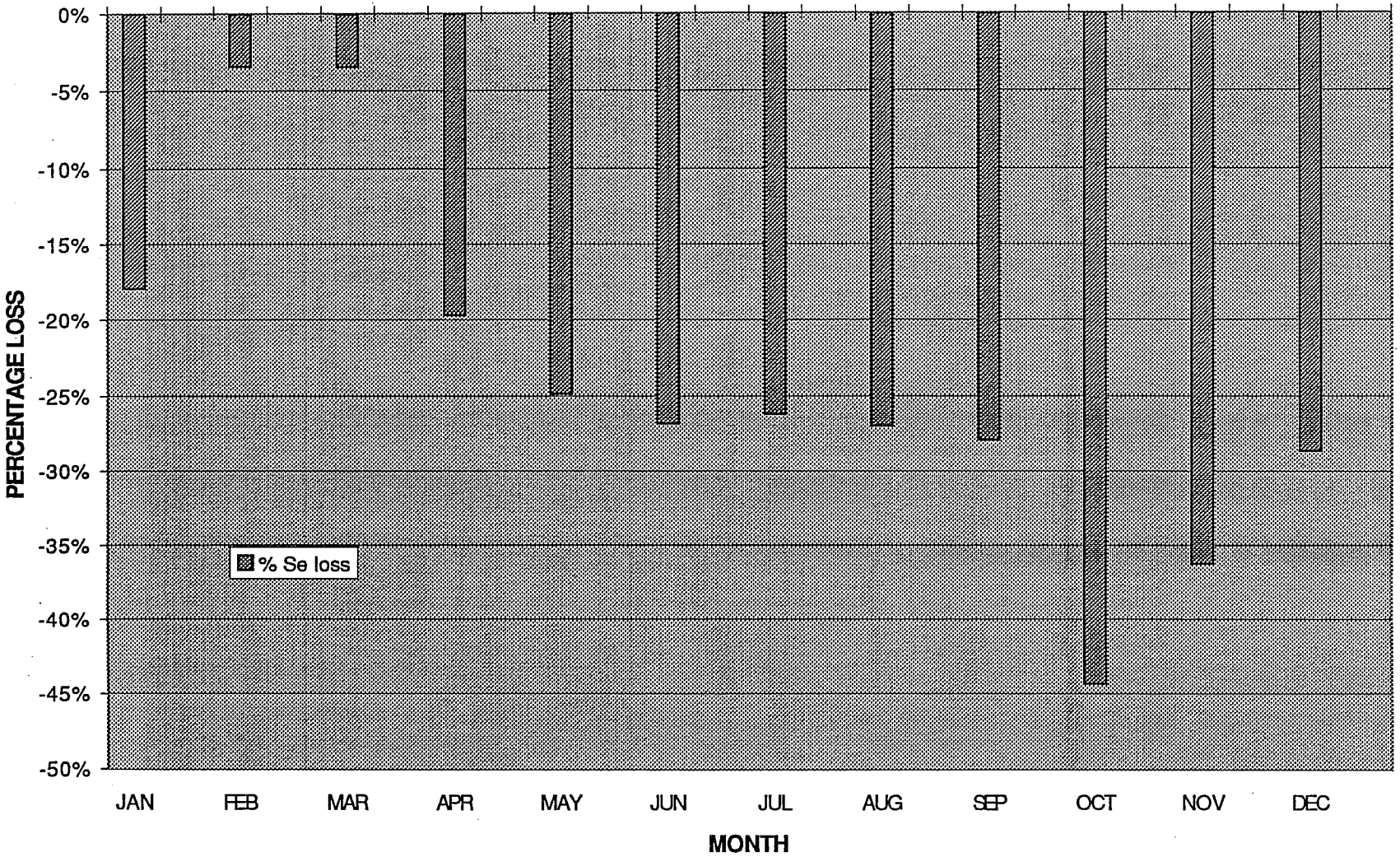


**FIGURE 5 MEAN MONTHLY Se IN-TRANSIT LOSSES**



the total channel length through which agricultural drainage would flow (from about 100 miles to about 50 miles), and that the in-transit system losses of selenium could decrease by approximately 50 percent.

These system losses of selenium are a matter of concern to the Grassland Water District, who is responsible for deliveries of fresh water supply to private duck clubs and wetlands and the State and Federal refuges in the Grasslands Basin. The District's concern is that the selenium which is retained in Grassland Water District channels becomes diverted instead into selenium sensitive waterfowl habitat. To address this concern, Reclamation provided funding to Lawrence Berkeley Laboratory to conduct a field experiment designed to better understand the fate of selenium in the Grassland system. The study has measured flow and water column and sediment selenium at two sites, located 3.6 miles apart along the Agatha Canal, in the south Grassland Water District, for the past 14 months. Although the study is not yet concluded, preliminary data show that there is no consistent loss of selenium between the two sites or significant build-up of selenium in sediments or aquatic vegetation. Microbial analysis of the water column at both Agatha sites has shown an abundance of bacteria that are capable of reducing both selenite and selenate to inert elemental selenium. Hence any accumulation of selenium in the surface layer of the canal bottom sediments as a result of microbial reduction, uptake and deposition would likely be in the inert elemental form.

The study has also shown a small increase in the depth of bottom sediments along the canal over the past 14 months. However, these sediments appear to be mostly inorganic in nature and there is no distinct organic detrital layer on the canal bottom sediments. A polysaccharide gel, similar to that which has been observed in the non-operating San Luis Drain, has been observed to accumulate (within 24 hours) in Agatha Canal samples returned to the laboratory. Professor Terry Leighton (Personal Communication, Dept. of Biochemistry, U.C. Berkeley) has attributed this to a matrix exuded by bacteria to prevent them from being carried downstream with the flow. The study has also shown only small variations in the hydraulic head with depth in monitoring wells located adjacent to the canal suggesting minor seasonal losses of agricultural drainage water from the canal to the groundwater aquifer.

This research suggests that the model of selenium uptake as a function of channel length may not adequately explain selenium in-transit losses. Figure 4 shows that the greatest losses of selenium from the Grasslands system coincide with the fall wetland flooding season. This would suggest that under current conditions (future without-project condition) some of the selenium losses are being diverted into duck clubs and refuges. Although Grassland Water District personnel are careful to flush the channels for several hours while making the transition from drainage water to fresh water (canals are used alternately for both water supply and drainage conveyance), it is difficult to displace all selenium contaminated drainage water from the canal. Additionally, the pore water in the top sediments, initially in equilibrium with the drainage water, may not be easily displaced allowing some osmotic migration of selenium into the fresh water supply.

The process of evaporation during the winter months could cause these initial concentrations to increase. On the other hand, the nutrient and biota rich

Joaquin River. Subsequently, as a result of recurring speculation regarding sediments in the Drain, the Task Group performed an assessment of the volume and composition of the sediments in the Drain and developed some potential options for sediment management. Additionally, in March 1995, flooding on the west side of the Valley resulted in an emergency release from the Drain. This emergency discharge resulted in a Regional Board hearing and subsequently, a request from the Regional Board for a sediment management plan.

There are three concerns with respect to this proposed project and sediments in the Drain: (a) whether sediments would become mobilized and discharged to Mud Slough with operation of the Drain; and/or (b) whether selenium which exists in the sediments would become mobilized and discharged to Mud Slough; and/or (c) whether the drain acts as a "sink" for selenium within the drainage discharged into the drain.

### 6.2.1 Information on Mobilization of Sediments

Information gathered during the March, 1995, flood event, discussed in Section 6.2.3, below, supports the conclusion that maximum flows under this project (up to 1st/second) will not result in mobilization of sediments.

From the research conducted in Grassland Water District during 1994 and 1995 it appears that a flowing San Luis Drain would be analogous to the existing Agatha Canal with the difference that the San Luis Drain would not be subjected to pulses of fresh water, which may be allowing some depuration of selenium and movement of soluble selenium from the surface sediments or pore waters into the water column. In the flowing Agatha system the following observations have been made:

(a) There is no noticeable organic layer or polysaccharide matrix (associated with certain types of bacteria) at the sediment/water interface in the Agatha Canal.

(b) Channel velocities in the Agatha Canal range between 0.2 and 0.7 m/s (0.6 - 2 ft/sec) (higher at the south end). Quarterly surveys of the channel show no aggradation of sediments at these velocities. Sediment appears to be accumulating at both the south and north ends of the canal. The velocity of flow in the San Luis Drain is not expected to exceed 1 ft/second. These observations support the analysis that sediments would not be mobilized at this flowrate.

### 6.2.2 Information on Mobilization of Selenium in Drain Sediments

Dr. Oleh Weres and Dr. Manucher Alemi, both recognized experts on selenium chemistry, have data to support the claim that under equilibrium conditions there is limited transfer of selenium between bottom sediments and the water column. Although equilibrium conditions re-establish quite quickly, Dr. Alemi advised that a week occur between the initial filling of the San Luis Drain and initial release of water to Mud Slough North when the Project was initiated. Dr Weres, who conducted laboratory experiments on selenium mass transfer rates and potential

the deeper anoxic sediments are disturbed and mechanically mixed in the water column. Selenium can also be transported with sediment in circumstances where bed velocities exceed minimum scouring velocities. Flow rates, although higher than would occur in operation of this project, were insufficiently high to cause bottom sediment scouring during the March releases from the San Luis Drain.

### 6.2.4 Sediment Management Strategies

Sediment removal has been discussed in detail during Technical Committee meetings. A Task Group was formed which conducted a field study in the San Luis Drain during 1994. The Task Group included representatives from USBR, USGS, USFWS, and the Regional Board.

Three alternatives were considered:

(a) Leave the sediments in place
(b) Remove sediments from those areas with the greatest accumulation
(c) Remove all sediments

The alternatives were further broken down into a number of options presented which include:

(a) 1. no action (leaving the sediments and vegetation in place)
2. removal of vegetation only
(b) 3. removal of sediment 200 ft beyond checks and disposal to Kesterson
4. removal of sediment 200 ft beyond checks and disposal to private land
(c) 5. complete removal and disposal in Kesterson
6. complete removal of sediment and disposal to private land
7. complete removal of sediment and disposal to margins of the Drain
8. complete removal of sediment and disposal to a dedicated landfill
9. complete removal of sediment and disposal to an existing Class II landfill

The committee provided possible hydraulic and environmental risks associated with each alternative that is included in the final report of the Task Force. There was general agreement of the Task Group that the users of the Drain must decide which option to pursue based on the risk they are willing to accept.

## 6.5 CONSTRUCTION IMPACTS

On June 20, 1995, the FWS surveyed the new alignments for the inlet connection to the San Luis Drain. (See Appendix 2.) The alignment area has been heavily disturbed by construction and maintenance of the two adjacent canals and the adjacent roadway. It is surrounded by agricultural land on all sides. It has been maintained by periodic disking and mowing and is vegetated by annual grasses and introduced forbs. There is not any suitable habitat for Federal or State-listed threatened or endangered species.

Construction areas have been evaluated by FWS and/or CDFG biologists to ensure the absence of sensitive plant species or other sensitive biological resources. Proposed construction has been designed to avoid, minimize, or mitigate disturbances.

Construction of the two new ditches would have minimal impact to terrestrial plants and animals due to the disturbed nature of the existing biological communities. The two clumps of salt cedar at the inlet drainage ditches would be cut down and the stumps immediately sprayed with the herbicide Garlon-4 prior to operation of the bypass to avoid seeds being transported downstream to Mud Slough. As shown in Appendix 2, the FWS at the San Luis National Wildlife Refuge Complex stated that it is extremely unlikely that connecting the Main Drain and the San Luis Drain through the proposed alignment of existing and newly constructed drainage ditches will have any adverse impact to any Federal or State-listed species nor to other trust resources within the immediate project site. On July 6, 1995, the CDFG concurred with this finding. (See Appendix 2.)

## 6.6 CULTURAL RESOURCES

The project will consist of the existing facilities and a connector between the Main Canal and the San Luis Drain. The proposed connector is approximately 3.5 miles long. Approximately 2.5 miles of the connector will utilize existing field drains. The constructed portions will cover an alignment about one mile long in a disturbed area adjacent to the Main Canal and across a small portion of a leveled field. The area has been entirely modified by agricultural activities.

The area was surveyed for historic properties in 1983 as part of studies related to the San Luis Drain. The area was found to be farmed intensively and had been leveled. No historic properties were identified.

The likelihood of discovering historic properties during construction is low. Should a find be made, work in the area of the find should be halted, and the find evaluated by an archeologist familiar with the region's cultural resources. If human remains are encountered the County Coroner must be informed.

# APPENDIX 1

# PLAN FOR INITIAL OPERATION, FILLING AND MANAGEMENT OF RELEASES FROM THE SAN LUIS DRAIN

## PLAN FOR INITIAL OPERATION, FILLING AND MANAGEMENT OF RELEASES FROM THE SAN LUIS DRAIN

The California Regional Water Quality Control Board (CRWQCB) conducted a study of standing water resident in the San Luis Drain on July 21, 1993. The objective of the study was to determine the total load of salt, boron and selenium present in the Drain in order to estimate possible impacts that an initial flush of this water on the San Joaquin River and downstream beneficial uses and users (Steensen, 1993). The major findings of the study were that much of the resident San Luis Drain water, when expressed as a weighted mean concentration, has a high boron concentration (19 mg/L), a high salt concentration (8500 mg/L) and a low selenium concentration (4 ppb). When expressed as a total mass the CRWCB estimated that approximately 0.45 kg of selenium, 2600 kg of boron and 1200 tonnes of salt (total dissolved solids) were contained in the Drain and would be discharged during the initial flushing of the Drain. At the time of the Regional Board survey on July 21, 1993, there was very little water present in the Drain, estimated to be approximately 116 ac-ft. This volume increases from seepage during fall flood-up of adjacent wetlands. The salt and boron concentrations are not expected to fall appreciably with seepage water since the resident groundwater has moderate salt and boron concentrations. The total load of selenium, boron and salt will likely increase by a small percentage with the addition of seepage water during fall flood up in the adjacent wetland areas with subsequent evapoconcentration in the Drain during the summer months.

### San Luis Drain Sediments

Selenium in the sediments may become mobilized and enter the water column if sediments in the Drain are exposed to the air, a situation which might occur if there was no water in that portion of the Drain prior to the introduction of water. In order to reduce the risk of selenium remobilization, the Drain should be filled with water in all reaches of the Drain and allowed to equilibrate before the water is routed to Mud Slough. The length of time for the water column and drain sediments to reach equilibrium cannot be predicted with any certainty although Alemi (personal communication, 1993) has indicated that selenium can change oxidation state from selenate to selenite forms relatively rapidly, in the order of days rather than weeks or months. Provided the sediments remain covered with sufficient water to prevent re-solubilization of selenium the initial operation of the San Luis Drain should not be constrained by water column - sediment interactions.

### A.1 Management Strategies

The potential effect of boron and salt in the initial drainage discharge would likely by limited to possible acute effects on aquatic life or agriculture. The South Delta Water Agency has indicated that mitigation of the potential impacts of boron and salt on agriculture should be relatively simple, especially if the initial use of the drain begins prior to the pre-irrigation and irrigation season.

The potential impact of boron and salt in the San Joaquin River could be mitigated by one or a combination of management strategies:

1. Release the water in the Drain at a rate that does not exceed the River's ability to assimilate the high levels of boron and salt. Although the CRWQCB survey indicates that these constituents will be more limiting than selenium, weekly selenium samples will be taken at the terminus of the Drain to ensure compliance with CRWQCB selenium objectives.

**(b) Filling of the Drain**

The Drain will be filled with agricultural drainage water section by section. Inflow to the Drain will then be shut off and the Drain will be left for a minimum period of 1 week for the sediments and water column to come to equilibrium. At the end of this period the gates at the terminus and inflow point will be opened and water allowed to flow along the Drain to Mud Slough (North) during a period when their is adequate assimilative capacity in the San Joaquin River.

**(c) Monitoring of San Luis Drain Water Prior to Discharge**

The CRWQCB has already conducted a study of selenium in the water column at various points along the San Luis Drain. A second reconnaissance, similar in design to the CRWQCB will be performed prior to discharge, but with sufficient time to allow processing of the selenium water quality samples and analysis of the data.

**(d) Potential Beneficial Use Impacts**

Current Grasslands Basin monitoring plans may need to be supplemented to ensure that adequate water quality samples are taken in Salt Slough and in the major conveyance channels through South Grasslands to determine beneficial impacts of the project. A log of water supply operations may also need to be kept to allow an assessment of increased flexibility of operations for water deliveries to the refuges and duck clubs. This flexibility may also have impacts on food availability to wildfowl.

**(e) Assimilative Capacity of the San Joaquin River**

A continuous assessment of San Joaquin River assimilative capacity for salts and selenium drainage should be made so as to best choose a time period for making the initial drainage release. Close cooperation with the various agencies that control reservoir releases to the San Joaquin River and with water districts that make irrigation diversions will be attempted using the new SJRWQOP Bulletin Board.

**(f) Mitigation Measures with Dilution Water**

Provision may need to be made for dilution water to mitigate any unforeseen water quality impacts during initial release of drain water. It is not anticipated that this water will be needed. Alternatively, drainage flows may be reduced or curtailed for a period of time sufficient to mitigate these water quality impacts.

# APPENDIX 2

## CORRESPONDENCE WITH U.S. FISH AND WILDLIFE SERVICE AND CALIFORNIA DEPARTMENT OF FISH AND GAME

# United States Department of the Interior

FISH AND WILDLIFE SERVICE

Ecological Services
Sacramento Field Office
2800 Cottage Way, Room E-1803
Sacramento, California 95825-1846

In Reply Refer To:
1-1-93-I-1016

September 15, 1993

Memorandum

To: Chief, Division of Planning and Technical Services, Mid-Pacific Regional Office, U.S. Bureau of Reclamation, Sacramento, California (Attn: Frank Michny)

From: Acting Field Supervisor, Ecological Services Sacramento Field Office, Sacramento, California (ES)

Subject: Informal Endangered Species Consultation on San Luis Drain/North Mud Slough Agricultural Drainwater Project, Merced County, California

This responds to your memorandum of June 8, 1993, requesting U.S. Fish and Wildlife Service (Service) concurrence in your determination that the proposed San Luis Drain project would not adversely affect Federally listed species. The proposed project would involve discontinuing use of South Mud Slough and Salt Slough to conduct agricultural drainwater from agricultural areas in the Panoche Drainage District and others (Panoche Coalition) to the San Joaquin River, and reopening use of the existing San Luis Drain to carry the drainwater from the point where it currently enters South Mud Slough to the end of the San Luis Drain, and using North Mud Slough to carry it from the end of the Drain to the San Joaquin River, its current destination.

We assume there will be no increase in selenium loading to the San Joaquin River resulting from this project based on conditions in the Use Agreement with Reclamation for the use of the San Luis Drain. However, if agreed upon monitoring indicates an increase in selenium loading above project baseline, the Federally listed threatened delta smelt (*Hypomesus transpacificus*), Federally proposed giant garter snake (*Thamnophis gigas*), and Federal candidate western pond turtle (*Clemmys marmorata pallida*) may be adversely affected, and initiation of formal consultation would be appropriate.

We concur with your finding that this project will not adversely affect the following Federally listed species: bald eagle (*Haliaeetus leucocephalus*) and Aleutian Canada goose (*Branta canadensis leucopareia*) because suitable habitat for these species does not exist in the area to be adversely affected by this action.

Historically, the giant garter snake was widely distributed throughout the Grasslands; hence, the habitat enhancement within the extent of the area where water quality will improve as a result of the proposed project could benefit

# United States Department of the Interior

FISH AND WILDLIFE SERVICE

San Luis National Wildlife Refuge Complex
P.O. Box 2176
Los Banos, California 93635
(209) 826-3508



MEMORANDUM

June 28, 1995

To: Mike Delamore - Chief, DWQE Branch
BR Mid-Pacific Region,
Sacramento, CA

From: Dennis W. Woolington - Supervisory Wildlife Biologist
San Luis NWRC, Los Banos, CA

Subj: Biological Reconnaissance of Proposed Alignment to Reroute Drainwater from the Main Drain to the San Luis Drain

On June 20, 1995 I surveyed the alignment (project site) of a proposed ditch connection between the Main Drain and the San luis Drain to determine biological resources and potential resource impacts. Construction of a connection between the two drains is the key feature in a multi-agency plan to reroute existing drainwater flows away from wetlands associated sloughs and channels of the Grasslands Ecological Area into the concrete-lined San Luis Drain. This memo is being prepared for the Bureau of Reclamation to record my site visit to the project area and to serve as reference material for any amendments to NEPA and ESA documents previously prepared for the proposed re-use of the San Luis Drain.

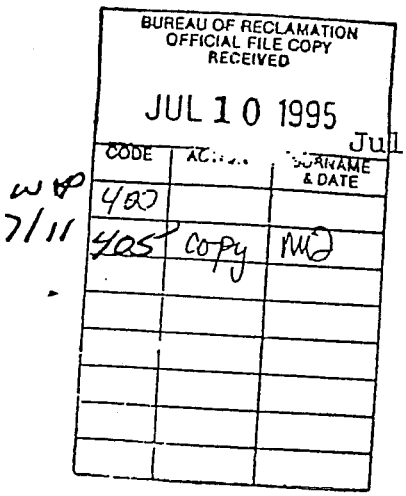
## Proposed Work and Site Description

The entire project site has been highly altered by previous activities associated with canal construction and operation and ongoing farming operations. The proposed alignment starts at an existing siphon that pipes drainwater from the Main Drain under the Main Canal. The siphon would be connected to a drainage ditch (100 cfs capacity) to be constructed within a 75 foot right-of-way between the Main Canal and Helm Canal. This strip of land has been heavily disturbed by construction and maintenance of the two canals and adjacent roadway. It has been maintained by periodic disking and mowing, and is vegetated by annual grasses and introduced forbs. All vegetation in the strip was mowed at the time of the site visit.

STATE OF CALIFORNIA—THE RESOURCES AGENCY

PETE WILSON, Governor

DEPARTMENT OF FISH AND GAME
LOS BANOS COMPLEX
18110 W. Henry Miller Avenue
Los Banos, CA 93635
(209) 826-0463




July 6, 1995

Mr. Mike Delamore
U.S. Bureau of Reclamation
Division of Planning and
Technical Services
2800 Cottage Way
Sacramento, California 95825-1846

Dear Mr. Delamore:

Subject: Use of San Luis Drain Project for Conveyance of Agricultural Drainage Waters.

The Department of Fish and Game has evaluated the proposed southern alignment for conveying subsurface agricultural drainage waters to the San Luis Drain from the existing Panoche and Main Drain for impacts to wildlife and associated habitat. The area affected by this alignment is located along the Fresno\Merced County line running along west boundary of Sections 32 and 29, and along the north boundary of Sections 29 and 28, T11S, R12E. The site is an existing agricultural drain border by in production agricultural lands on all sides. Crops consist of cotton, sugar beets, and rice.

The Department concurs with the findings of the U.S. Fish and Wildlife service in that this project will not have a significant impact upon any wildlife species or it's habitat including sensitive, Threatened or Endangered species.

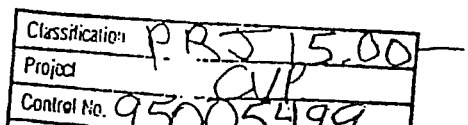
If you have any questions or wish to discuss these comments, please contact me at the above address or telephone (209) 826-0463.

Sincerely,

John A. Beam
Associate Wildlife Biologist

cc: E. Smith R4-SWB





# United States Department of the Interior

FISH AND WILDLIFE SERVICE
Ecological Services
Sacramento Field Office
2800 Cottage Way, Room E-1803
Sacramento, California 95825

IN REPLY REFER TO:

In Reply Refer To:
1-1-95-I-1462

September 25, 1995

Memorandum

To: Regional Supervisor, Water and Power Resources Management, Bureau of Reclamation, Sacramento, California
Attention: Mr. Robert Stackhouse

From: Field Supervisor, Ecological Services, Sacramento Field Office, Sacramento, California (ES)

Subject: Informal Endangered Species Consultation on the San Luis Drain/North Mud Slough Agricultural Drain Water Project, Merced County, California

This responds to your letter dated July 11, 1995, requesting concurrence with the determination that the proposed action, San Luis Drain/North Mud Slough Agricultural Drain Water Project, is not likely to adversely affect the giant garter snake, *Thamnophis gigas*, federally listed as threatened. We have reviewed the material transmitted with your correspondence and concur with this determination, providing the conservation measures identified in this documentation are followed. Therefore, unless new information reveals effects of the proposed action that may affect the giant garter snake in a manner or to an extent not considered, no further action pursuant to the Endangered Species Act of 1973, as amended, regarding the giant garter snake is necessary.

Although your letter did not address effects to delta smelt, *Hypomesus transpacificus*, we have the following concerns. The effects of selenium on delta smelt are not known. However, studies have shown that other fish are affected by low concentrations of selenium. The 1995 biological opinion on the effects of the Central Valley Project and State Water Project on delta smelt does not specifically address effects of the San Luis drain and varying concentrations of selenium on delta smelt. This opinion does establish a new environmental baseline for the Sacramento-San Joaquin Delta based on the implementation of the Bay/Delta Accord water quality standards.

The United States Fish and Wildlife Service cannot determine the effects of the Bay/Delta Accord on concentrations of selenium caused by operation of the San Luis Drain or subsequent effects on delta smelt. To determine effects on delta smelt, monitoring of concentrations of selenium, sampling of delta smelt distributions in effected areas, and toxicological studies on the effects of selenium on delta smelt need to be done. The Service recommends that the Bureau of Reclamation acquire any information currently available on these issues and subsequently initiate additional monitoring, sampling, or studies to supplement this information so that an effect determination may be made.

# United States Department of the Interior

FISH AND WILDLIFE SERVICE
**Ecological Services**
**Sacramento Field Office**
**2800 Cottage Way, Room E-1803**
**Sacramento, California 95825**

IN REPLY REFER TO:

**In Reply Refer To:**
1-1-95-I-67

October 26, 1995

**Memorandum**

**To:** Regional Supervisor, Water and Power Resources Management, Bureau of Reclamation, United States Department of the Interior, Sacramento California; Attention: Mr. Robert Stackhouse

**From:** Field Supervisor, Ecological Services, Sacramento Field Office, Sacramento, California (ES)

**Subject:** Informal Endangered Species Consultation on the San Luis Drain/North Mud Slough Agricultural Drain Water Project, Merced County, California

This letter amends our letter dated September 11, 1995, providing guidance for avoiding impacts by the proposed action, San Luis Drain/North Mud Slough Agricultural Drain Water Project. The purpose of this letter is to provide further guidance and clarification regarding the project. We have reviewed the material transmitted with your correspondence and made a site visit on October 12, 1995, to the proposed construction area. As a result, we concur with your determination that this project is not likely to adversely affect the giant garter snake, *Thamnophis gigas*, federally listed as threatened, providing the conservation measures identified in this documentation are followed:

1. A Fish and Wildlife Service (Service)-approved biologist shall conduct worker awareness education for the heavy equipment operators immediately prior to phase 1 grub out (channelization) at the Mud Slough North construction area. The action will help the operators minimize possible impacts to any snakes inhabiting the area or to snake habitat.

2. A Service-approved biologist shall be present during the phase 1 process to oversee construction and halt construction if any snakes are encountered during disturbance thereby minimizing individual mortality.

3. An effort will be made to complete phase 1 of the project by November 1. This will minimize disturbance to any giant garter snakes that might migrate to the area during initiation of hibernation subsequent to this date.

4. If, in the event the phase 1 grub out cannot be completed by November 1, construction of a snake barrier (drift fence) must be carried out by November 1. The barrier shall consist of hardware cloth (metal flashing or other suitable material) buried to prevent snakes from passing underneath. The purpose of the barrier is to exclude giant garter snakes from the construction zone and prevent burrowing and hibernation activity. During phase I construction the biologist should walk the barrier, checking for snakes on both sides. The Service will provide guidance on installation and monitoring of the snake barrier.

Unless new information reveals effects of the proposed action that may effect

## Performance Incentive System

### Yearly Maximums and Distribution

| Year | Maximum | % Annual | % Monthly |
|---|---|---|---|
| 1 | $133,000 | 75 | 25 |
| 2 | 200,000 | 75 | 25 |
| 3 | 300,000 | 50 | 50 |
| 4 | 400,000 | 50 | 50 |
| 5 | 500,000 | 50 | 50 |

### Annual Exceedance Fee

| Year | 0.1-5% | 5.1-10% | 10.1-15% | 15.1-20% | 20+ |
|---|---|---|---|---|---|
| 1 | 25,000 | 50,000 | 75,000 | 100,000 | 100,000 |
| 2 | 44,000 | 79,000 | 115,000 | 150,000 | 150,000 |
| 3 | 63,000 | 92,000 | 121,000 | 150,000 | 150,000 |
| 4 | 81,000 | 121,000 | 160,000 | 200,000 | 200,000 |
| 5 | 100,000 | 150,000 | 200,000 | 250,000 | 250,000 |

### Monthly Exceedance Fee

| Year | 0.1-10% | 10.1-15% | 15.1-20% | 20.1-25% | 25+ |
|---|---|---|---|---|---|
| 1 | 700 | 1,400 | 2,100 | 2,800 | 2,800 |
| 2 | 1,200 | 2,200 | 3,200 | 4,200 | 4,200 |
| 3 | 5,200 | 7,600 | 10,100 | 12,500 | 12,500 |
| 4 | 6,800 | 10,100 | 13,400 | 16,700 | 16,700 |
| 5 | 8,300 | 12,500 | 16,700 | 20,800 | 20,800 |

## APPENDIX 4

## LETTER TO CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD

## APPENDIX A
## SELENIUM LOAD VALUES

| | 2-YEAR LOAD VALUES 10/95-9/97 (Se lbs) | 3-YEAR LOAD VALUES 10/97-9/98 (Se lbs) | 4-YEAR LOAD VALUES 10/98-9/99 (Se lbs) | 5-YEAR LOAD VALUES 10/99-9/00 (Se lbs) |
|---|---|---|---|---|
| Oct | 348 | 348 | 348 | 348 |
| Nov | 348 | 348 | 348 | 348 |
| Dec | 389 | 389 | 389 | 389 |
| Jan | 533 | 506 | 479 | 453 |
| Feb | 866 | 823 | 779 | 736 |
| March | 1066 | 1013 | 959 | 906 |
| April | 799 | 759 | 719 | 679 |
| May | 666 | 633 | 599 | 566 |
| June | 599 | 569 | 539 | 509 |
| July | 599 | 569 | 539 | 509 |
| Aug | 533 | 506 | 480 | 453 |
| Sept | 350 | 350 | 350 | 350 |
| 12-MONTH TOTAL[1] | 7096 | 6813 | 6528 | 6246 |
| ANNUAL LOAD VALUES | 6660[2] | 6327[3] | 5994[4] | 5661[5] |

ENDNOTES:

1. The 12-month total for any given year is somewhat higher than the annual load target for that year because the monthly targets for the months of September, October, November, and December have been adjusted to allow for greater selenium discharge than would typically occur. This adjustment has been made to provide greater selenium management flexibility during months when the assimilative capacity of the river is sufficient to sustain this greater load.

APPENDIX B
Performance Incentive System

Yearly Maximums and Distribution

| Year | Maximum | % Annual | % Monthly |
|---|---|---|---|
| 1 | $133,000 | 75 | 25 |
| 2 | 200,000 | 75 | 25 |
| 3 | 300,000 | 50 | 50 |
| 4 | 400,000 | 50 | 50 |
| 5 | 500,000 | 50 | 50 |

Annual Exceedance Fee

| Year | 0.1-5% | 5.1-10% | 10.1-15% | 15.1-20% | 20+ |
|---|---|---|---|---|---|
| 1 | 25,000 | 50,000 | 75,000 | 100,000 | 100,000 |
| 2 | 44,000 | 79,000 | 115,000 | 150,000 | 150,000 |
| 3 | 63,000 | 92,000 | 121,000 | 150,000 | 150,000 |
| 4 | 81,000 | 121,000 | 160,000 | 200,000 | 200,000 |
| 5 | 100,000 | 150,000 | 200,000 | 250,000 | 250,000 |

Monthly Exceedance Fee

| Year | 0.1-10% | 10.1-15% | 15.1-20% | 20.1-25% | 25+ |
|---|---|---|---|---|---|
| 1 | 700 | 1,400 | 2,100 | 2,800 | 2,800 |
| 2 | 1,200 | 2,200 | 3,200 | 4,200 | 4,200 |
| 3 | 5,200 | 7,600 | 10,100 | 12,500 | 12,500 |
| 4 | 6,800 | 10,100 | 13,400 | 16,700 | 16,700 |
| 5 | 8,300 | 12,500 | 16,700 | 20,800 | 20,800 |

# APPENDIX 5

# USE AGREEMENT

Agreement No. 6-07-20-W1319

UNITED STATES
DEPARTMENT OF INTERIOR
BUREAU OF RECLAMATION
Central Valley Project, California

# AGREEMENT FOR USE OF THE SAN LUIS DRAIN

THIS AGREEMENT is entered into this 3rd day of November 1995, in accordance with the Act of Congress approved June 17, 1902 (32 Stat. 388) and all Acts amendatory thereof and supplemental thereto, all such Acts commonly known as and referred to as the Federal Reclamation Law, by the United States of America (UNITED STATES), acting by and through its Bureau of Reclamation, Mid-Pacific Region (RECLAMATION), Department of the Interior, represented by the officer executing this agreement, and the San Luis & Delta-Mendota Water Authority (AUTHORITY), a joint powers authority, duly organized, existing and acting pursuant to the laws of the State of California, acting by and through its Executive Director.

## RECITALS

A. The UNITED STATES has acquired land and constructed the San Luis Drain, as a feature of its Central Valley Project.

B. The AUTHORITY has requested that the UNITED STATES permit it to use a portion of the San Luis Drain consisting of approximately 28

absence of the project. RECLAMATION and the AUTHORITY will work to monitor and analyze the effect of the project on this objective through analysis of the monthly effects on salinity concentrations and loads.

D. The AUTHORITY has entered into an agreement with its members, referred to as the Grassland Basin Drainage Management Activity Agreement, and into memoranda of understanding with certain other parties, all of which have a need for use of the San Luis Drain. RECLAMATION has no objection to the AUTHORITY entering into such agreements.

E. The UNITED STATES has no objection to such use of the Drain and RECLAMATION land as such use is, at this time, not incompatible with the purpose of the Drain and the purpose for which the RECLAMATION land was withdrawn or acquired and is being administered by the UNITED STATES.

F. The AUTHORITY has entered into Cooperative Agreement No. 3-FC-30-10820, as modified (the "Cooperative Agreement"), with RECLAMATION, whereby the AUTHORITY is responsible for, among other things, the operation and maintenance of the San Luis Drain to the extent described in the Performance Work Statement created pursuant to the Cooperative Agreement and according to the terms set forth therein; the scope of AUTHORITY's responsibility for operation and maintenance of the San Luis Drain and of its authority delegated by

persons and in such amounts as are consistent with that determination.

(7) Drainage Incentive Fees owed by the AUTHORITY pursuant to subsection II H(4) and any funds held in the Drainage Incentive Fee Account as of the date of termination of this Agreement shall be paid, held, administered and disposed of in accordance with this subsection II. H. Except for Drainage Incentive Fees owed on the date of termination, the AUTHORITY shall have no obligation for Drainage Incentive Fees under the Agreement following the termination hereof.

III. Monitoring

The AUTHORITY shall be responsible for implementation of a monitoring program in accordance with the requirements of the FONSI.

IV. Construction, Operation and Maintenance

A. The AUTHORITY shall comply with the requirements of the FONSI in all construction, operation and maintenance activities.

B. The AUTHORITY shall develop and implement, at its own and sole expense, a supplemental maintenance program for the Drain appropriate for the use under this Agreement. The maintenance program shall be submitted to RECLAMATION for review and approval within 30 days of the effective date of this Agreement, and shall

facilities installed by the AUTHORITY and shall promptly furnish a copy of each revised drawing to RECLAMATION.

F. The Parties acknowledge and agree that the Draining Parties shall be responsible to the Authority for payment of all operation and maintenance, administration, and construction costs arising from performance by the Authority pursuant to this Use Agreement, provided, that payment for baseline operation and maintenance and administration costs incurred by the Authority for the San Luis Drain pursuant to the Cooperative Agreement shall be budgeted, and repayment responsibility shall be allocated, in accordance with the terms of the Cooperative Agreement without regard to this Use Agreement.

V. Term, Extension Term, and Termination

A. This Agreement shall become effective on its date of execution by the parties, and unless sooner terminated in accordance with its terms, shall remain in effect for a term of two (2) years from the date drainwater is first discharged by the AUTHORITY, or by one of the Draining Parties pursuant to the Activity Agreement or an MOU with the AUTHORITY, into the Drain.

B. This Agreement shall be extended for a period of three (3) years as provided in the FONSI.

E. This Agreement will be reviewed at least annually for compliance with its terms and conditions and, except as otherwise set forth herein, shall be subject to termination upon a finding that the Authority failed to comply with any of the terms or conditions of this Agreement or if unacceptable adverse environmental effects occur as determined pursuant to the FONSI. For purposes of this paragraph, if RECLAMATION determines, based on available data and after consultation with the Oversight Committee and the AUTHORITY, that unacceptable adverse environmental effects have occurred due to the use of the Drain, RECLAMATION shall notify the AUTHORITY of its determination and provide the AUTHORITY an adequate opportunity to refute this determination. If, in RECLAMATION's judgement, the AUTHORITY fails to provide sufficient evidence refuting RECLAMATION's determination, RECLAMATION shall terminate this Agreement.

F. Except as otherwise set forth herein, RECLAMATION may terminate this Agreement upon failure of the AUTHORITY or a Draining party to comply with any of the terms, conditions and limitations of this Agreement or the FONSI, if such noncompliance is continuing 60 days after written notice to the AUTHORITY of such noncompliance. The requirement of continuing noncompliance for 60 days after written notice does not apply to violation of terms, conditions and limitations of this Agreement or the FONSI, where such provisions state requirements that, if violated, cannot be cured by subsequent AUTHORITY action, including, without limita-

I. In the event that an out-of-valley export facility addressed by the Partial Judgement dated March 10, 1995, in Sumner Peck Ranch, Inc., v. Bureau of Reclamation, Civ. Nos. F-91-048 OWW & F-88-634 OWW (E.D.Cal.) is constructed, discharge permits obtained, and environmental compliance completed during the term of this Agreement (including any extension), this Agreement will terminate.

J. In the event that this Agreement is terminated for any reason, the Parties understand that the Draining Parties intend to resume discharge of drainage water through channels historically utilized.

VI. Restoration

Upon termination of this Agreement, at the discretion of the UNITED STATES, the AUTHORITY shall remove without delay, and at the expense of the AUTHORITY, all equipment and improvements and other facilities constructed or placed upon the Land, and shall restore said Land to as nearly the same condition as existed prior to the issuance of this Agreement and repair any damage to the Drain arising out of its use of the Drain. In the event the AUTHORITY fails to remove all equipment, improvements or facilities within a reasonable time, not to exceed sixty (60) days, the UNITED STATES may remove them and restore the land and repair the Drain at the expense of the AUTHORITY.

Parties within the Drainage Area discharging into the Drain pursuant hereto concerning the question of ultimate liability for costs initially funded by the UNITED STATES in undertaking management actions with respect to the Drain, nor shall this Agreement affect the positions of the UNITED STATES, the AUTHORITY nor any other Draining Party utilizing the Drain concerning any contractual or legal obligation of RECLAMATION to provide drainage service pursuant to the San Luis Act.

E. This Agreement does not constitute a contract or an amendment of a contract as described in Section 203(a) of the Reclamation Reform Act of 1982 and the implementing rules and regulations, nor does it constitute a new contract nor an amendment of a contract for the delivery of water from the Central Valley Project within the meaning of Sections 105 and 106 of Public Law 99-546 (100 Stat. 3050, et seq.), nor does this constitute an amendment of the Second Amended Contract for Exchange of Waters dated February 14, 1968, between the United States of America and Central California Irrigation District, Columbia Canal Company, San Luis Canal Company and Firebaugh Canal Company.

F. The UNITED STATES shall not be liable for any claims for damages, cleanup, or remedial actions arising from or attributed to discharges from the Drain by or on behalf of the AUTHORITY or the Draining Parties during the AUTHORITY's use of the Drain pursuant to the term of this Agreement.

I. Notwithstanding anything in this Agreement to the contrary, the AUTHORITY is authorized to enter into agreements with other entities, including but not limited to one or more of the Draining Parties, pursuant to which the AUTHORITY is or will be indemnified and/or held harmless with regard to all or any portion of the AUTHORITY's obligations under this Agreement.

J. Nothing in this Agreement shall create any rights in favor of any person or entity that is not a signatory to this Agreement, save and except for rights created pursuant to the Grassland Basin Drainage Management Activity Agreement and any MOU's between the AUTHORITY and the Draining Parties within the Drainage Area.

K. The expenditure of any money or the performance of any obligation of RECLAMATION under this Agreement shall be contingent upon appropriation or allotment of funds. Absence of appropriation or allotment of funds shall not relieve the AUTHORITY from any obligation under this Agreement. No liability shall accrue to the RECLAMATION in case funds are not appropriated or allotted.

L. No member of or delegate to Congress, or official of the AUTHORITY shall benefit from this Agreement other than as a water user or landowner in the same manner as other water users or landowners in the AUTHORITY.

AGREEMENT OF USE
FOR THE
SAN LUIS DRAIN

APPENDIX "A"

(DESCRIPTION OF LANDS)

**APPENDIX "A"** 4/20/95

1. All of those portions of Sections 26, 27, 34, 35 and 36 in T. 11 S., R. 11 E., M.D.B. & M., Sections 31, 32, 33 and 34 in T. 11 S., R. 12 E., M.D.B. & M., Section 1 in T. 12 S., R. 11 E., M.D.B. & M., and Sections 2, 3, 4, 5, 6, 9, 10, 11 and 12 in T. 12 S., R. 12 E., M.D.B. & M., bounded on the north by the south right-of-way line of the Central California Irrigation District Main Canal, bounded on the east by the boundary of the Central California Irrigation District, bounded on the south by the north right-of-way line of the Central California Irrigation District Outside Canal, and bounded on the west by the Central California District Camp 13 Bypass Canal.

Containing 5,380 acres, more or less.

2. All of those portions of Section 13, T. 12 S., R. 12 E., M.D.B. & M., and Sections 7, 17, 18, and 19, T. 12 S., R. 13 E., M.D.B. & M., bounded partially on the north and west by the Panoche Drainage District, bounded partially on the west, south and east by the Firebaugh Canal Water District and the Widren Water District, and bounded partially on the north by the southerly right-of-way line of the Central California Irrigation District Outside Canal.

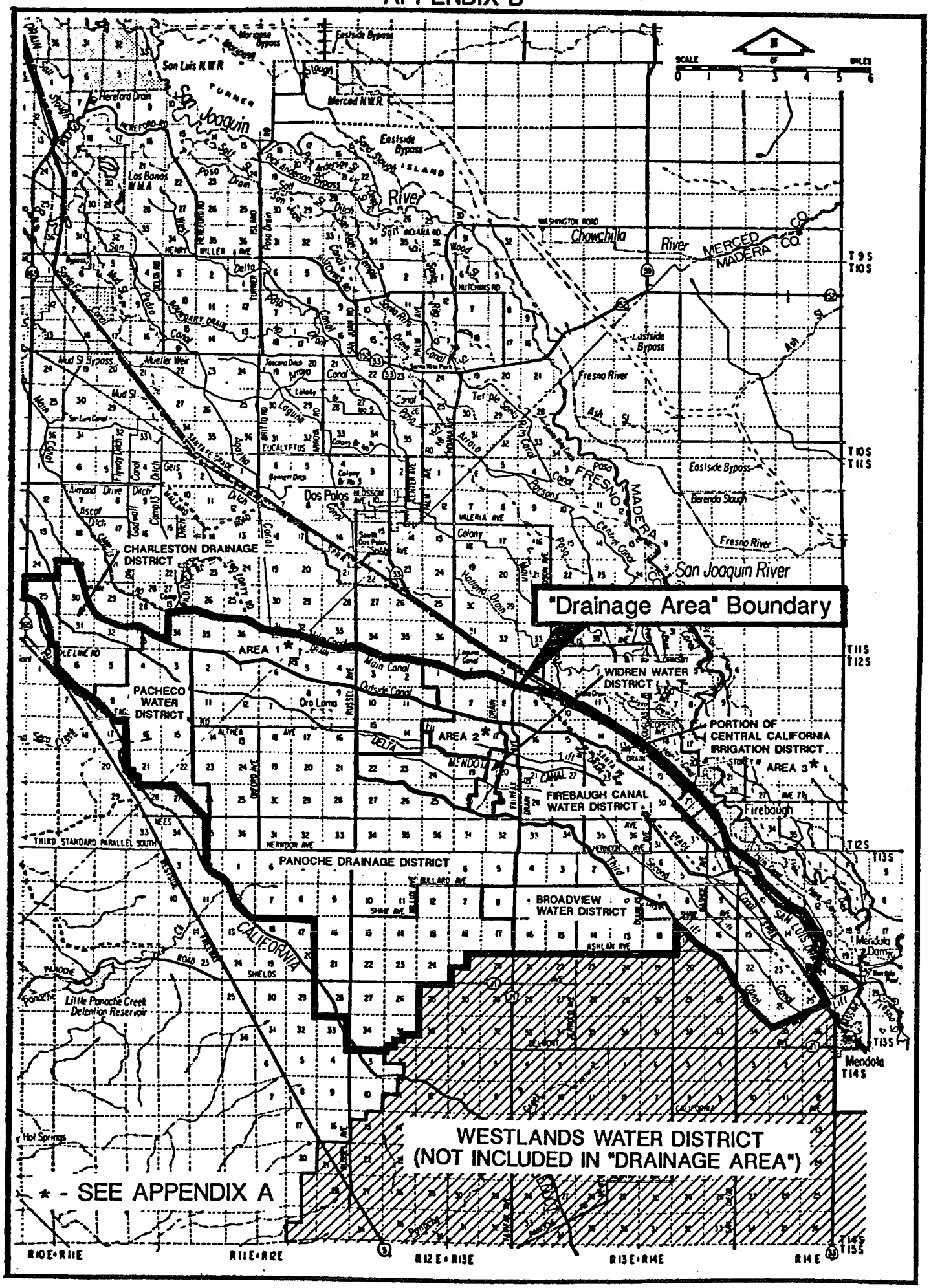
Containing 1,410 acres, more or less.

# AGREEMENT OF USE
# FOR THE
# SAN LUIS DRAIN

## APPENDIX "B"

## (GEOGRAPHIC LOCATION)

# APPENDIX B


"Drainage Area" Boundary
CHARLESTON DRAINAGE DISTRICT
PACHECO WATER DISTRICT
AREA 1*
AREA 2*
AREA 3*
WIDREN WATER DISTRICT
PORTION OF CENTRAL CALIFORNIA IRRIGATION DISTRICT
FIREBAUGH CANAL WATER DISTRICT
PANOCHE DRAINAGE DISTRICT
BROADVIEW WATER DISTRICT
WESTLANDS WATER DISTRICT
(NOT INCLUDED IN "DRAINAGE AREA")
* - SEE APPENDIX A
San Joaquin River
Chowchilla River
Fresno River
MERCED CO.
MADERA CO.
FRESNO CO.
Eastside Bypass
Mendota Dam
Firebaugh
Dos Palos
Los Banos WMA
San Luis N.W.R.
Merced N.W.R.
Little Panoche Creek Detention Reservoir
Hot Springs
T9S T10S
T10S T11S
T11S T12S
T12S T13S
T13S T14S
R10E-R11E
R11E-R12E
R12E-R13E
R13E-R14E
R14E